IN THE CLAIMS:

The text of all pending claims are set forth below. Cancelled and withdrawn claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (previously amended), (cancelled), (withdrawn), (new), (previously added), (reinstated - formerly claim #), (previously reinstated), (re-presented - formerly dependent claim #) or, (previously re-presented).

Please CANCEL claim 1-8 and ADD new claims 9-26 in accordance with the following:

1-8 (cancelled)

9. (new) A plasma particulate filter comprising:

a mesh of ceramic filter material having a first set of walls extending in a first direction and a second set of walls extending in a second direction, the first set of walls intersecting the second set of walls to form substantially parallel inlet and outlet passages, the inlet and outlet passages being closed at alternate ends of the mesh, each passage having a cross section with four corners defined by intersections of the first and second set of walls; and

precisely two active electrodes provided for each inlet passage to oxidize particulates deposited within the inlet passage on the filter material within the inlet passage, the electrodes being formed at intersections of the first and second sets of walls such that for each inlet passage, an electrode is provided each of two diagonally opposing corners, the electrodes having opposite polarities, each electrode serving two inlet passages.

10. (new) The plasma particulate filter as claimed in claim 9, wherein the electrodes are embedded in the filter material.

11. (new) The plasma particulate filter as claimed in claim 9, wherein the electrodes are embedded in an electrically insulating barrier material of low porosity.

12. (new) The plasma particulate filter as claimed in claim 9, wherein

the inlet passages each have a cross section with two-line symmetry and with $n \times 4$ corners, where $n \geq 2$, and

the nx4 corners are obtained by deformation of a quadrilateral cross section.

13. (new) A plasma particulate filter based on a wall flow filter, comprising:

elongated inlet and outlet passages which are closed on alternate sides and which are made from ceramic filter material such that particulates are deposited on surfaces of the filter material within the inlet passages, the passages each having a cross section with two-line symmetry; and

precisely two electrodes of different polarity, lying on one of the lines of symmetry, per inlet passage, the electrodes regenerating the filter by oxidizing the particulates through dielectric barrier sliding surface discharges.

14. (new) The plasma particulate filter as claimed in claim 13, wherein the electrodes are embedded in the filter material to protect the electrodes against erosion.

15. (new) The plasma particulate filter as claimed in claim 13, wherein the electrodes are embedded in an electrically insulating barrier material of low porosity.

16. (new) The plasma particulate filter as claimed in claim 13, wherein the electrodes are positioned to generate sliding surface discharges that selectively burn particulates on the inlet passages.

17. (new) The plasma particulate filter as claimed in claim 13, wherein the cross section of the passages with two-line symmetry has a quadrilateral geometry, the two electrodes being arranged at opposite corners of the quadrilateral geometry.

18. (new) The plasma particulate filter as claimed in claim 17, wherein the quadrilateral geometry is a vertically oriented diamond.

19. (new) The plasma particulate filter as claimed in claim 18, wherein

the inlet passages have adjacent diamond-shaped cross sections,

electrodes are arranged at diagonally opposite corners of a plurality of diamond-shaped cross sections, and

for adjacent inlet passages, the electrodes at the corners are connected so as to have the same polarity.

20. (new) The plasma particulate filter as claimed in claim 13, wherein

the inlet passages each have a cross section with two-line symmetry and with n×4

corners, where $n \geq 2$, and

the nx4 corners are obtained by deformation of a quadrilateral cross section while maintaining the electrodes on one of the lines of symmetry.

21. (new) The plasma particulate filter as claimed in claim 14, wherein the electrodes are embedded in an electrically insulating barrier material of low porosity.

22. (new) The plasma particulate filter as claimed in claim 21, wherein the electrodes are positioned to generate sliding surface discharges that selectively burn particulates on the inlet passages.

23. (new) The plasma particulate filter as claimed in claim 22, wherein the cross section of the passages with two-line symmetry has a quadrilateral geometry, the two electrodes being arranged at opposite corners of the quadrilateral geometry.

24. (new) The plasma particulate filter as claimed in claim 23, wherein the quadrilateral geometry is a vertically oriented diamond.

25. (new) The plasma particulate filter as claimed in claim 24, wherein

the inlet passages have adjacent diamond-shaped cross sections,

electrodes are arranged at diagonally opposite corners of a plurality of diamond-shaped cross sections, and

for adjacent inlet passages, the electrodes at the corners are connected so as to have the same polarity.

26. (new) The plasma particulate filter as claimed in claim 25, wherein

the inlet passages each have a cross section with two-line symmetry and with $n \times 4$ corners, where $n \geq 2$, and

the nx4 corners are obtained by deformation of a quadrilateral cross section while maintaining the electrodes on one of the lines of symmetry.